

REMARKS

The Final Office Action of October 3, 2005, has been received and reviewed.

Claims 1-52 are currently pending in the above-referenced application. Claims 3, 11 and 13-53 have been withdrawn from consideration. Claims 1, 2, 4, 5, 8-10, and 12, which have been considered, stand rejected. Claims 6 and 7 recite allowable subject matter, but have been objected to for depending from rejected base claims.

Reconsideration of the above-referenced application is respectfully requested.

Supplemental Information Disclosure Statement

Please note that a Supplemental Information Disclosure Statement was filed in the above-referenced application on March 8, 2004, but that the undersigned attorney has not yet received any indication that the references cited in the Supplemental Information Disclosure Statement have been considered in the above-referenced application. It is respectfully requested that the references cited in the Supplemental Information Disclosure Statement of March 8, 2004, be considered and made of record in the above-referenced application and that an initialed copy of the Form PTO/SB/08A that accompanied that Supplemental Information Disclosure Statement be returned to the undersigned attorney as evidence of such consideration.

Rejections under 35 U.S.C. § 102

Claims 1, 2, 4, 5, 8-10, and 12 stand rejected under 35 U.S.C. § 102(b).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Kowase

Claims 1, 2, 4, 5, 8-10, and 12 have been rejected under 35 U.S.C. § 102(b) for being drawn to subject matter that is allegedly anticipated by the subject matter disclosed in Japanese patent publication 63-232342 of Kowase (hereinafter "Kowase").

The spare English disclosure of Kowase, the specification of which has only been provided in Japanese, relates to a semiconductor chips 1 and carriers, or packages 6, therefor. The packages 6 of Kowase include receptacles 7 for receiving the semiconductor chips 1. Kowase illustrates to configurations by which electrical communication between each semiconductor chip 1 and its corresponding package 6 may be established. In one configuration, shown in Figs. 1-4 of Kowase, outer terminals 3 are located on the edges of the semiconductor chips 1. When the semiconductor chip 1 is placed within the receptacle 7 of the package 6, these outer terminals 3 connect with corresponding terminals 9 located on interior walls 9 of the receptacle 7. Purpose; FIGs. 1-4.

Although the English Constitution of Kowase provides no further disclosure, it is apparent from Figs. 5-7 that another configuration of semiconductor chip 1 and package 6 therefor has also been disclosed. In that configuration, each semiconductor chip 1 includes beveled edges 13, over which terminal ends 14 of conductive traces 2 extend. Figs. 5 and 6. The package 6, at an outer periphery of the receptacle 7 formed therein, also includes beveled edges 15, over which terminal ends 16 of conductive traces of the package 6 extend. Fig. 6. When the semiconductor chip 1 is placed within the receptacle 7 of the package 6, the bevels 13 and 15 form a groove and the terminal ends 14 of the conductive traces 2 of the semiconductor chip 1 align with corresponding terminal ends 16 of the package 6. Fig. 6. Electrical communication is established between each terminal end 14 and its corresponding terminal end 16 by placing a conductor 18-bearing elongate element 17 within the groove formed by bevels 13 and 15. Figs. 6 and 7.

With respect to the subject matter shown in Figs. 1-4 of Kowase, it appears that the terminals 3 are located on an edge of the semiconductor chip 1, but not within recesses in the edge of the semiconductor chip 1. As for the subject matter depicted in Figs. 5-7, the bevels 13 on the edges of the semiconductor chip 13 are not recesses in a peripheral edge. Therefore,

Kowase does not expressly or inherently describe, or anticipate, a semiconductor device package that includes a semiconductor device with at least one recess in a peripheral edge thereof.

Therefore, under 35 U.S.C. § 102(b), the subject matter recited in independent claim 1 is allowable over the subject matter described in Kowase, inasmuch as the disclosure of Kowase can be understood.

Claims 2, 4, 5, 8-10, and 12 are each allowable, among other reasons, for depending either directly or indirectly from independent claim 1, which is allowable.

Claim 4 is additionally allowable because Kowase fails to disclose a backside layer substantially covering a backside of the semiconductor device.

Claim 5 is additionally allowable because Kowase fails to disclose an outer connector comprising opposite surfaces exposed at the active surface and back side of the semiconductor device.

Akram

Claims 1, 2, 4, 5, 8-10, and 12 are also rejected under 35 U.S.C. § 102(b) for being directed to subject matter that is assertedly anticipated by the disclosure of U.S. Patent 6,072,236 to Akram, et al. (hereinafter "Akram").

Akram discloses a chip scale package that "may be employed to move or reroute bond locations." Col. 2, lines 57-58. In Figs. 6-7, Akram discloses a package 210 with bond pads 16 that are rerouted by circuit traces 114 to new bond pads 116 adjacent the edge of the package 210. Col. 6, lines 32-37; Figs. 6-7. Apertures 22 in a separate blank 20 expose the underlying bond pads 216. Col. 6, lines 34-35; Figs. 6-7. Shallow trenches 122 in the blank 20 may connect to the apertures 22 and aid in connecting the new bond pads 116 with conductors 218 of the carrier 216 in a Direct Die to Chip (DDC) connection. Col. 6, lines 39-46; Figs. 7-8. The trenches may extend all the way from the edge of the blank 20 to the original bond pads 16 and provided a trench circuit trace. Col. 6, lines 52-60; FIG. 6. In this instance, the trench circuit trace would extend through the blank 20, but would rise to a shallower depth to place material of the blank 20 between the trench and the underlying die. Col. 6, lines 57-60.

Akram, however, fails to disclose each and every element of independent claim 1, either expressly or inherently. Among other things, Akram fails to disclose an outer connector

positioned at least partially within a recess in a peripheral edge of a semiconductor device and having a height that extends substantially along a height of the peripheral edge. Because Akram fails to disclose each and every element of independent claim 1 in as complete detail as the claim, it is respectfully submitted that the subject matter to which independent claim 1 is directed is, under 35 U.S.C §102(b), allowable over the subject matter disclosed in Akram.

Claims 2, 4, 5, 8-10, and 12 are each allowable, among other reasons, for depending either directly or indirectly from allowable independent claim 1, which is allowable.

Claim 4 is additionally allowable because Akram fails to disclose a backside layer substantially covering a backside of the semiconductor device.

Claim 5 is additionally allowable because Akram fails to disclose an outer connector comprising opposite surfaces exposed at the active surface and back side of the semiconductor device.

Claim 12 is additionally allowable because Akram fails to disclose a plurality of outer connectors positioned adjacent to at least two peripheral edges of the semiconductor device.

For the foregoing reasons, the withdrawal of the 35 U.S.C. § 102(b) rejections of claims 1, 2, 4, 5, 8-10, and 12 is respectfully solicited.

Allowable Subject Matter

The indication that claims 6 and 7 are drawn to allowable subject matter is noted with appreciation. Neither of these claims has been amended to independent form, as the claims from which they depend are believed to be allowable.

Election of Species Requirement

It is respectfully submitted that independent claim 1 remains generic to all of the species of invention that were identified in the Election of Species Requirement in the above-referenced application. In view of the allowability of these claims, claims 3, 11, and 13-52, which have been withdrawn from consideration, should also be considered and allowed. M.P.E.P. § 806.04(d).

CONCLUSION

It is respectfully submitted that each of claims 1-52 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



Brick G. Power
Registration No. 38,581
Attorney for Applicants
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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